

## 目 次

### □ 红外材料与器件

- 碲锌镉衬底晶面极性对水平液相外延碲镉汞薄膜的影响(封面文章) … 霍勤 张诚 焦翠灵 王仍 毛诚铭 等(1)  
InAs/GaSb II类超晶格长波红外探测器的表面处理研究 ……………… 崔玉容 周易 黄敏 王芳芳 徐志成 等(8)  
垂直外腔面发射半导体激光器的双波长调控研究 ……………… 李雪 张继业 张建伟 张星 张卓 等(14)  
10 W近衍射极限输出的高效率窄线宽主控振荡放大半导体激光器… 杜维川 何林安 李弋 贺钰雯 谢鹏飞 等(21)

### □ 太赫兹与毫米波技术

- 太赫兹带状注器件…………… 吕志方 张长青 王战亮 江胜坤 阮存军 等(26)  
基于 70 nm InP HEMT 工艺的 230~250 GHz 低噪声放大器设计 ……………… 刘星 孟范忠 陈艳 张傲 高建军(37)  
平面超材料对曲折线慢波结构行波管效率改善和杂模抑制的影响…………… 李周琦珺 文政 张志强 罗积润(43)

### □ 遥感技术与应用

- 基于多视场狭缝的高效信息获取光谱成像系统…………… 刘世界 张星宇 周浩 李春来 李东景 等(50)

### □ 红外及光电技术与应用

- 多块合并压缩感知实时成像…………… 李虎 刘雪峰 姚旭日 刘璠 窦申成 等(61)  
基于多路径正反馈机制的零折射率超材料高效纳米激光器…………… 张振清 董丽娟 邓富胜 李云辉 许静平 等(72)  
入射光谱及功率密度对 GaSb 热光伏电池性能的影响 ……………… 王新 陈学 潘虹宇 柳秀丽 夏新林(78)  
考虑脉冲高度分布(PHD)的光电倍增管光子探测模型…………… 向雨琰 马跃 郭高峰 景泉 李松(88)

### □ 图像处理及软件仿真

- 基于偏振权重局部对比度的目标检测 ……………… 赵永强 张景程 乔新博(102)  
基于压缩感知的 AOTF 光谱测量方法 ……………… 姬忠鹏 桂裕华 李津宁 谭永健 杨秋杰 等(111)  
低功耗非制冷红外图像处理专用 SoC 芯片 ……………… 郭广浩 吴南健 刘力源(122)  
基于 PSO 算法的硅基 C 波段低损耗紧凑型偏振分束旋转器 ……………… 惠战强 李斌 李田甜 韩冬冬 巩稼民(132)



本刊支持开放获取(Open Access)

彩色电子版内容获取

请扫描左侧二维码关注学报公众号

## CONTENTS

Effect of polarity of CdZnTe substrate on slider liquid phase epitaxy of HgCdTe (Cover Article) .....  
..... HUO Qin, ZHANG Cheng,  
JIAO Cui-Ling, WANG Reng, MAO Cheng-Ming, LU Ye, QIAO Hui, LI Xiang-Yang (1)

Studies on the surface treatment of InAs/GaSb type-II super-lattice long-wave infrared detectors ..... CUI Yu-Rong,  
ZHOU Yi, HUANG Min, WANG Fang-Fang, XU Zhi-Cheng, XU Jia-Jia, CHEN Jian-Xin, HE Li (8)

Switchable dual-wavelength vertical-external-cavity surface-emitting laser ..... LI Xue, ZHANG Jj-Ye,  
ZHANG Jian-Wei, ZHANG Xing, ZHANG Zhuo, ZENG Yu-Gang, ZHANG Jun,  
ZHOU Yin-Li, ZHU Hong-Bo, NING Yong-Qiang, QIN Li, WANG Li-Jun (14)

Monolithic master oscillator high efficiency diode laser with nearly diffraction-limited narrowband emission and  
10 W of optical output power ..... DU Wei-Chuan, HE Lin-An, LI Yi, HE Yu-Wen,  
XIE Peng-Fei, ZHOU Kun, ZHANG Liang, LIU Sheng-Zhe, GAO Song-Xin, TANG Chun (21)

Terahertz sheet beam vacuum electron devices ..... LYU Zhi-Fang, ZHANG Chang-Qing, WANG Zhan-Liang,  
JIANG Sheng-Kun, RUAN Cun-Jun, FENG Jin-Jun, GONG Yu-Bin, DUAN Zhao-Yun (26)

Design of 230~250 GHz low noise amplifier based on 70 nm InP HEMT process .....  
..... LIU Xing, MENG Fan-Zhong, CHEN Yan, ZHANG Ao, GAO Jian-Jun (37)

Effect of a planar metamaterial on the efficiency improvement and parasitic oscillations suppression of a meander-  
line slow wave traveling wave tube ..... LI Zhou-Qi-Jun, WEN Zheng, ZHANG Zhi-Qiang, LUO Ji-Run (43)

Efficient information acquisition spectral imaging system based on multi-field slits ..... LIU Shi-Jie,  
ZHANG Xing-Yu, ZHOU Hao, LI Chun-Lai, LI Dong Jing, QI Hong-Xing, WANG Jian-Yu (50)

Multiblock compressed sensing imaging in real time .....  
..... LI Hu, LIU Xue-Feng, YAO Xu-Ri, LIU Fan, DOU Shen-Cheng, HU Tai, ZHAI Guang-Jie (61)

High-efficiency nano laser based on multipath positive feedback mechanism of matching zero-index metamaterials  
..... ZHANG Zhen-Qing, DONG Li-Juan, DENG Fu-Sheng, LI Yun-Hui, XU Jing-Ping,  
..... SUN Yong, CHEN Hong (72)

Effects of incident spectrum and radiative power intensity on the performance of GaSb thermophotovoltaic cell ...  
..... WANG Xin, CHEN Xue, PAN Hong-Yu, LIU Xiu-Li, XIA Xin-Lin (78)

The photon detection mode of photomultiplier tubes considering the pulse height distribution .....  
..... XIANG Yu-Yan, MA Yue, GUO Gao-Feng, JING Quan, LI Song (88)

Object detection based on polarization-weighted local contrast method .....  
..... ZHAO Yong-Qiang, ZHANG Jing-Cheng, QIAO Xin-Bo (102)

An acousto-optic tunable filter spectral measurement method based on compressed sensing ..... JI Zhong-Peng,  
GUI Yu-Hua, LI Jin-Ning, TAN Yong-Jian, YANG Qiu-Jie, WANG Jian-Yu, HE Zhi-Ping (111)

Low power application specific SoC chip for uncooled infrared image processing .....  
..... GUO Guang-Hao, WU Nan-Jian, LIU Li-Yuan (122)

Silicon-based C-band low-loss compact polarization splitter rotator based on PSO algorithm .....  
..... HUI Zhan-Qiang, LI Bin, LI Tian-Tian, HAN Dong-Dong, GONG Jia-Min (132)